REMARKS

The following remarks are responsive to the August 15, 2005 Office Action. Claims 2-9 and 11-12 remain as originally filed. Claims 1 and 10 are currently amended. New Claims 23-41 have been added. Claims 1-12 and 23-41 are therefore presented for further consideration. Please reconsider the Claims in view of the following remarks.

Allowable Subject Matter

Applicant notes with appreciation that Claims 10-12 are allowed.

Amendments

Applicant has amended Claim 1 for better clarity only. Applicant submits that the amendment is fully supported by the application as filed. See, e.g., paragraph [0029] and Figures 3, 5A, and 5B of the published application. Applicant has also amended Claims 1 and 10 to remove repetitive and unnecessary uses of "and."

Applicant has also added dependent Claims 23-41 to better protect the subject matter that Applicant views as the inventions.

Response to Rejection of Claims 1-9 under 35 U.S.C. § 103(a) over Lee

In the August 15, 2005 Office Action, Claims 1 and 3-6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application No. 2003/0054729 A1 to Lee et al. ("Lee"). Applicant respectfully traverses the present rejection because Lee, either alone or in combination with other references of record, fails to teach or suggest the elements of the claims.

Claim 1

As amended, Claim 1 recites:

> 1. A process for electrochemically removing overburden conductive material formed over cavities having cavity conductive material therein on a surface of a workpiece, comprising the steps:
>
> contacting the overburden conductive material with a remover including a porous conductive member insulatively coupled to an electrode, the remover being smaller in area than the workpiece;
>
> applying a voltage between the porous conductive member and the electrode;
>
> establishing relative motion between the workpiece and the remover; and
>
> electrochemically removing the overburden conductive material on the surface of the workpiece while establishing relative motion.

The Examiner states that Lee teaches many of the limitations of Claim 1, but notes that Lee does not teach or suggest a porous conductive member as applied in the process. The Examiner attempts to make up for this deficiency by saying that a porous conductive member is considered to be an obvious design of choice since any member of a structure can be designed to perform better in the process.

Applicant does not accept that use of a porous conductive member, for which the Examiner provides no reference, is an obvious design choice. More importantly, Lee fails to teach "contact" in the manner claimed.

Applicant submits that the combination of Lee and the art of record does not provide all the limitations of Claim 1. Lee discloses a method for removing conductive material by not contacting the overburden conductive material with an electrode. "One feature of an embodiment of the apparatus 160 shown in FIG. 3 is that the electrodes 120 **do not contact** the conductive layer 111 of the substrate 110." *See* Lee at [0036]. The distance between the electrodes 120 and the conductive layer 111 is D_1. *See* Lee at [0035]. Thus, Lee does not teach or suggest "contacting the overburden conductive material with a remover including a porous conductive member insulatively coupled to an electrode." Furthermore, the Examiner has not produced any reference to teach or suggest contacting an overburden conductive material with a remover including a porous conductive member insulatively coupled to an electrode. Therefore, no secondary references remedy the deficiencies of Lee, and Lee, either alone or in combination with other references, does not provide all the limitations of Claim 1.

Applicant further submits that the art of record does not provide a motivation to modify the teachings of Lee. Lee discloses an apparatus that does not contact the conductive layer. Lee does not teach or suggest that the electrode could usefully contact the conductive layer. In fact, Lee teaches away from contact by saying that such an arrangement "can eliminate the residual conductive material resulting from a direct electrical connection between the electrodes 120 and the conductive layer 111." *See* Lee at [0036]. Thus, a skilled artisan, looking at the Lee reference, would not be motivated to combine Lee with any teaching that contacts the electrode with the conductive layer. The art of record also does not provide a motivation to contact the overburden conductive material with a porous conductive member insulatively coupled to an electrode.

Applicant additionally objects to the characterization of many elements contained in Lee. With regard to Figure 3, the member 140 is a support member, not a conductive member. *See* Lee at [0032]. Moreover, the support member 140 is not insulatively coupled to the electrode 120. Instead, Lee discloses that the support member 140 may be coupled to a drive unit 141 in order to move the conductive material 111 in the directions A and B. Furthermore, a voltage is not applied between the conductive member 140 and the electrode 120. Rather, the voltage is applied across the first electrode 120*a* and the second electrode 120*b*. *See* Lee at [0033] & [0036]. The electrode 120 is not insulatively coupled to the conductive material 111. Instead, the electrode 120 may be connected to an electrode drive unit 123 in order to move the electrode in directions C and D as illustrated in Figure 3. *See* Lee at [0033].

Since the asserted art does not teach or suggest all the limitations of Claim 1 and the art of record does not provide a motivation to modify or combine the teachings of Lee with a conductive member that contacts the conductive material being electrochemically etched, or that such a modification/combination would be beneficial, Applicant submits that Claim 1 is patentably distinguished from the Lee and the art of record. Applicant respectfully requests that the Examiner withdraw the rejection of Claim 1 and pass Claim 1 to allowance.

Claims 3-6

As described above, Applicant submits that Claim 1 is patentably distinguished over the combination of Lee and the art of record. Claims 3 and 6 each depend from Claim 1, and Claims 4-5 each depend from Claim 3. Thus, Claims 3-6 each include all the limitations of Claim 1, as well as other limitations of particular utility. At least some of these limitations are not taught or

suggested by the combination of Lee and the other art of record. Therefore, for at least the reasons discussed above in relation to Claim 1, Applicant submits that Claims 3-6 are each patentably distinguished over the asserted modification of Lee. Applicant respectfully requests that the Examiner withdraw the rejection of Claims 3-6 and to pass Claims 3-6 to allowance.

Claim 2

As described above, Applicant submits that Claim 1 is patentably distinguished over the combination of Lee and the art of record. Claim 2 depends from Claim 1. Thus, Claim 2 includes all the limitations of Claim 1, as well as other limitations of particular utility. At least some of these limitations are not taught or suggested by the combination of Lee and the other art of record. Therefore, for at least the reasons discussed above in relation to Claim 1, Applicant submits that Claim 2 is patentably distinguished over the asserted modification of Lee. Applicant respectfully requests that the Examiner withdraw the rejection of Claim 2 and to pass Claim 2 to allowance.

Response to Rejection of Claims 7-9 under 35 U.S.C. § 103(a) over Lee in view of Ohmori

In the August 15, 2005 Office Action, Claims 7-9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee in view of U.S. Patent No. 6,506,103 to Ohmori et al. ("Ohmori"). Applicants respectfully traverse the present rejection because Ohmori, either alone or in combination with Lee, fails to teach or suggest the elements of the claims.

Claims 7-9

Ohmori also fails to provide motivation to contact the overburden conductive material with a remover including a porous conductive member insulatively coupled to an electrode. Ohmori discloses a grinding wheel that mechanically removes material from a workpiece. The Ohmori apparatus does not perform an electrolytic process, but is "electrolytic dressing" for the sole purpose of dressing or conditioning the grinding and regulating wheels, not for removing material from the workpiece. *See* Ohmori at col. 3, ll. 49-57 and col. 4, ll. 29-48. As shown in Figure 2, and described in col. 4, l. 62 – col. 5, l. 8, a potential is applied between the regulating wheel 10 and the electrode 14 while the conductive fluid 8 is supplied between them to perform "electrolytic dressing" of the regulating wheel 10. As shown in Figure 2, negative electrodes 5, 6 and the conductive fluid are used to perform "electrolytic dressing" of the surface of the grinding wheel 4 while a positive potential is applied to the grinding wheel. Thus, the grinding wheel in

Ohmori is configured only for **mechanical** removal of material from a workpiece, not electrochemical removal, as recited in Claim 1. Therefore, a skilled artisan would not be motivated to combine the mechanical teaching of Ohmori with the electrochemical teaching of Lee, although such a combination still does not teach or suggest contacting the overburden conductive material with a remover including a porous conductive member insulatively coupled to an electrode.

Since the combination of Lee and Ohmori does not teach or suggest all the limitations of Claim 1 and the prior art does not provide a motivation to combine the teachings of Lee and Ohmori, or that such a combination would be beneficial, Applicant submits that Claim 1 is patentably distinguished from the combination of Lee and Ohmori.

As described above, Applicant submits that Claim 1 is patentably distinguished over the combination of Lee and the other references of record. Claims 7-9 each depend from Claim 1. Thus, Claims 7-9 each include all the limitations of Claim 1, as well as other limitations of particular utility. At least some of these limitations are not taught or suggested by the combination of Lee and Ohmori. Therefore, for at least the reasons discussed above in relation to Claim 1, Applicant submits that Claims 7-9 are each patentably distinguished over the combination of Lee and Ohmori. Applicant respectfully requests that the Examiner withdraw the rejection of Claims 7-9 and to pass Claims 7-9 to allowance.

New Claims

New Claims 23-41 have been added and are fully supported by the application as originally filed. Applicants respectfully submit that new Claims 23-41, which ultimately depend from and include all of the limitations of amended Claim 1, which is allowable as discussed above, are also allowable. Furthermore, each of the new dependent claims recites further distinguishing features of particular utility.

Summary

Applicant respectfully submits that all of the pending Claims are allowed or allowable. Applicant respectfully submits that the Examiner withdraw the rejection of Claims 1-9 and to pass Claims 1-12 and 23-41 to allowance.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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